QUARTZ GLASS CRUCIBLE FOR PULLING UP SILICON SINGLE CRYSTAL AND ITS PRODUCTION

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Abstract of **JP5105577**

PURPOSE:To enable stable pulling-up of a high-quality silicon single crystal by forming the outer layer part of a glass crucible as a foam-rich quartz glass layer specified in the content of Na, K, Li and Al and forming the inner layer part of the crucible as a transparent glass layer specified in OH group content. CONSTITUTION:A rotating mold 1 is equipped with a rotating shaft 2 and a cavity 1a is formed in the mold 1. A foam-rich quartz glass crucible substrate body 3 constituting the outer layer part is arranged in the cavity 1a. In the substrate body 3, Na, K and Li contents are each <=0.3ppm and Al content is >=5ppm. Then, a heat source 5 is inserted into the substrate body 3 and heating is carried out. High temperature gas atmosphere 8 is formed in the crucible substrate body 3 by a heat source 5 and high-purity amorphous synthetic silica powder 6 is fed from a nozzle 9 into the high temperature gas atmosphere 8. Thereby the silica powder 6 is melted to form a transparent silica glass layer (inner layer part) being <=200ppm in the content of OH group.